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Customs Human Capital Development and Management System-
Business and User Requirements
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ABSTRACT

This document presents the findings of a consultancy undertaken by Allied Software in October/November 2004. It addresses the requirements of a Human Capital Development and Management system that is envisioned within Jordan National Customs (JNC) as part of the Customs modernization initiative launched by the Customs Modernization and Reform Subcomponent.

The document presents a collection of business and user requirements (functional, non-functional, and technical) that were collected through background interviews with key staff members at JNC. It also presents information related to the current network infrastructure and server configuration at JNC.

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ABBREVIATIONS AND ACRONYMS

ADDIE	Analysis, Design, Development, Implement, Evaluate
AMIR	Achievement of Market-Friendly Initiatives and Results Program
CBT	Computer Based Training
HCDM	Human Capital Development and Management
HR	Human Resource
ISD	Instructional System Design
JNC	Jordan National Customs
OJT	On-Job-Training
RDBMS	Relational Database Management System
SAT	Systems Approach to Training
SME	Subject Matter Expert
TO	Training Objective
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Background

An earlier consultancy initiative, which was done by Gaetan Turgeon and engaged by AMIR in December 2003, evaluated the Training framework adopted by JNC. The consultancy advised that a shift to the Systems Approach to Training (SAT) is recommended to improve the efficiency of the human capital development and the training process within JNC. SAT has been successfully deployed across many World Customs Organizations (including the Canadian Customs) and has been used as a core framework for managing training requirements in the US military for many years. An overview of the SAT model is provided at Annex A: Systems Approach to Training (SAT).

Following on from Mr. Turgeon's work, another AMIR consultant, Andrew Ford, has recommended that JNC adopt an IT solution that can support the SAT approach to training. Any such solution would need to address each of the component parts of the SAT approach, including:

- Performance management
- Skills/competence tracking
- Training tracking

A number of options for meeting SAT IT requirements were considered, including purchasing a comprehensive Commercial-Off-The-Shelf Human Capital Development and Management (HCDM) software solution; purchasing a combination of performance management, skills/competence tracking and training tracking software, designing and developing the solution using in-house resources or using an external software developer to design the solution.

This document presents the requirements identified by JNC for the envisioned HCDM system. The HCDM System will provide JNC with a comprehensive and open IT platform to allow the organization to use a SAT approach to meeting its human resources development requirements. It will also provide JNC with a collection of functionalities that are related to Human Resources information management and reporting.

INTRODUCTION

Objective

The document presents a collection of business and user requirements (functional, non-functional, and technical) for the HCDM System software. It describes the required functionality of the system, which will conform to the existing Human Resources-related business processes adopted at JNC, and will provide JNC with a comprehensive and open IT platform to enable the organization to use SAT to meet its human resources development requirements for the next 2-6 year period.

It also presents information related to the existing systems that provide Human Resources and Training-related functionalities within JNC. Integration and interaction information is also presented for these systems. The document concludes by presenting information related to the current network infrastructure and server configuration at JNC.

The information presented in this document was collected through several meetings with representative from the AMIR program, as well as background interviews with key staff members at JNC.

Document Organization

The document includes the following section:

- Section "Executive Summary" presents a high level overview of the project
- Section "Introduction" describes the objective, the organization of this document, and the business owners of the system.
- Section "HCDM System High Level Requirements" describes the high level requirements of the HCDM System
- Section "HCDM System Functional Requirements" describes the functional requirements of the HCDM System.
- Section "HCDM System Data Requirements" describes the data elements that the HCDM System should be able to manipulate..
- Section "Reporting and Workforce Planning" describes the requirements of the reporting and workforce planning modules
- Section "Non Functional Requirements" describes the non-functional requirements of the system (performance, security…).
- Section "Technical Requirements" describe the technical requirements of the system (server, client, database)
- "Annex A: Systems Approach to Training (SAT)" provides an overview of the System Approach to Training concept.
- "Annex B: Background Information" provides information related to the existing systems at JNC.

Business Owners

Four Directorates within JNC are identified as the business owners of the system. Staff members from these different directorates were interviewed during the requirements gathering exercise.

The business owners of the system will be:

- JNC Human Resources (HR) Directorate.
- JNC Information Technology (IT) Directorate.
- JNC Planning and Organization Directorate.
- JNC Training Center.

HCDM System High Level Requirements

The following are high level requirements of the HCDM System that were identified and documented during the several consultancy initiatives done by AMIR and Allied Software. They present the high level HR-related and Training-related functionalities that are required by the system.

High Level Requirements	
Item	*Description*
HLR1[1]	Ability to provide the services and functionalities currently available to JNC staff through the Human Resources, Training, and Attendance systems. The HCDM system is required to replace these systems, and utilize their existing data.
HLR2[1]	Ability to integrate with the existing Financial System currently used by JNC staff.
HLR3[1]	Ability to integrate with the existing JNC Encyclopedia application.
HLR4	Ability to upload existing Customs electronic records, and hence closure of superseded systems at a time to be determined by JNC.
HLR5	Compliance with Jordan labor requirements. See the "Civil Service Statute" on the Civil Service Bureau web site "www.csb.gov.jo" for more information on these requirements.
HLR6[1]	Ability to integrate with the existing Human Resources system currently in use by the Civil Service Bureau. This system is expected to be rolled out for use by all government departments (including JNC) within the coming 1-2 years.
HLR7	Ability to support each of the components of the Systems Approach to Training, including: • Analysis • Training design • Evaluation design • Conduct of training; and • Validation See "Annex A: Systems Approach to Training (SAT)" for more information on SAT.
HLR8	Ability to support preparation of training material and provision of administrative guidelines and checklists as part of the training design phase.
HLR9	Ability to support key performance indicators measuring the success criteria of training to be conducted.

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1 For more information on these existing systems, refer to section " Annex B: Background Information"

High Level Requirements (contd.)	
Item	**Description**
HLR10	Ability to provide feedback to course designers, evaluators and sponsors related to the effectiveness of the training and evaluation package.
HLR11	Ability to measure the original training analysis accuracy and design effectiveness which complies with the requirements following the OJT assessment impact of the course. Ability to support feedback from analysis to sponsors of SAT phases and other management systems.
HLR12	Ability to list and help manage Subject Matter Experts and training specialists, whether sourced in-house or externally.
HLR13	Ability to support or interface with a performance management/employee appraisal system, including ability to identify high performance employees and match them to appropriate positions within the organization and to identify knowledge and skills required to perform a job, as specified in a job description.
HLR14	Ability to collate and manage Job Analysis Profiles, including job description details, including responsibilities and major functions.
HLR15	Ability to support a Training Needs Analysis capability describing the importance of tasks such as: frequency, conditions, acceptable standards, knowledge, requirements, and legal authority.
HLR16	Ability to specify job requirements in detail.
HLR17	Ability to identify a typical group of individuals who show executive potential and contribute to their training/development and accelerate their promotion.

HCDM System Functional Requirements

The system is expected to support each of the components of the (SAT) grouped into a five-phase procedure:

- Analysis
- Training Design
- Evaluation Design
- Conduct of training
- Validation

The following Human Resources Management (HRM) documentation will be utilized for the analysis phase of the SAT:

- Employee records
- Job descriptions
- Performance records
- Job rotation

More information on these data elements can be found in section (HCDM System Data Requirements)

The following table presents the requirements of the SAT analysis phase.

SAT Analysis Phase Requirements	
Item	*Description*
SR1.1	Ability to record the training objectives reflecting the needs of the workforce to perform the necessary work to meet organizational goals and objectives.
SR1.2	Ability to provide an accurate description of the work performed.
SR1.3	Ability to provide an accurate description of the target training population.
SR1.4	Ability to support the following planning activities: • Plan the analysis. • Identify work requirements. • Select work requirements for training. • Identify performance requirements of selected work for training. • Develop performance standards. • Determine the characteristics of the target training population. • Develop training objectives and recommendations. • Report to sponsor.
SR1.5	Ability to support processes and store information related to the following: • Literature review. • Observations. • Interviews. • Questionnaires – e.g. Position Analysis Questionnaire and Managers Needs Identification Kit (MANIKIT). • Work diaries. • Board of experts.
SR1.6	Ability to sponsor and use Subject Matter Experts (SME)s

SAT Analysis Phase Requirements (contd.)	
Item	*Description*
SR1.7	Ability to support a training project directive including the following: • Background to the training analysis or reason for the project. • Aim and scope. • Specific objectives of the training analysis. • Data collection and analysis methods. • Role of the analyst and various other groups within the parent organization. • Schedule and milestone dates with provision points. • Cost and resource information. • Identification of specific subject matter experts. • Points of contacts in various groups affected by the analysis. • Methods of reporting by the analyst to the sponsor.
SR1.8	Ability to store and retrieve background information related to the training analysis phase including: • Relevant legislation and regulations. • Policy manuals. • Job descriptions. • Training material. • Reports of previous studies and analyses.
SR1.9	Ability to accurately determine which of the OJT tasks are currently performed and which of the environmental factors are affecting job performance.
SR1.10	Ability to weight each task and environmental factor in accordance with its training significance including assigning to each task and environmental factor a number that reflects its relative potential compared with all the other identified tasks and environmental factors with respect to their training needs.
SR1.11	Ability to break down the tasks selected for training into detailed task elements, skills and knowledge which must be learned. In addition, information needs to be stored that allows the accurate description of performance and the standard of performance required for the job.
SR1.12	Ability to store, manage and retrieve the following information: • Identification of task elements (i.e., steps in the performance of the task) Identification of supporting skills and knowledge required for proficient performance of each task Identification of data which will permit specification of conditions and standards, including tools, equipment, references for procedures, supervision, safety standards, consequences of error, time, etc.
SR1.13	Ability to store, manage and retrieve training management information, including the following: • How much training the organization can afford • Where the training will be delivered • Who will deliver the training • Changes to selection standards • The minimum prerequisites for knowledge and skills on which the training objective can be built

SAT Analysis Phase Requirements (contd.)	
Item	*Description*
SR1.14	Ability to store, manage and retrieve information related to the characteristics of the target training population, including the following: • Total number • Locations • Age distribution • Turnover rate • Classifications • Time in service and position • Language • Education level • Personal traits • Skills and knowledge levels • Previous training and experience • Selection test scores • Current performance levels • Attitude towards training
SR1.15	Ability to record constraints to the design and delivery of training.
SR1.16	Ability to support a reporting mechanism to the training sponsor that includes the following: • The background to the analysis, including a copy of the project directive • A record of the steps taken and the recommendations made • Supporting data for all decisions made • The approved performance standards • The training objectives • The profile of the target training population • Supporting performance data including task element, skills and knowledge requirements • Recommendations on other training matters such as selection of training sites and OJT • Recommendations on non-training matters such as selection requirements.

The following table presents the requirements of the SAT Training Design phase.

2. SAT Training Design Phase	
Item	**Description**
SR2.1	Ability to store, manage and retrieve a Training Package including detailed lesson plans, an OJT Coach's Guide, handouts, audio-visual production, learning methodology and exercises, pre-course readings and anything else that is required for course delivery both in the classroom and OJT.
SR2.2	Ability to store, manage and retrieve an Administrative Package including lists of all suppliers, equipment and facilities, joining instructions, course schedules, administrative checklists and anything else required by the administrators.

2. SAT Training Design Phase (contd.)	
Item	*Description*
SR2.3	Ability to support the training project plan including the following: • Objectives and scope of the project • Events, activities, milestones, decision points and timing • Specific resources in funds and personnel • Profile of the required subject matter experts • Contacts required both within and outside the organization • Translation, equipment, workspace and graphic/printing requirements • Any other information required in the particular organization
SR2.4	Ability to develop and record enabling objectives (sub-objectives) from the Training Objective (TO) produced in the analysis phase, including discrete and usable parts such as task elements, knowledge or skills.
SR2.5	Ability to support a workflow that includes the following: • Sequencing Training Objectives and sub-objectives in a logical order • Outlining content and methodology • Drafting a schedule based on the weighting given to the original tasks and environmental factors • Update the cost estimate included in the original project plan
SR2.6	Ability to support a Management Information Brochure that contains the training objective, test descriptions and feedback, participant selection profile, OJT requirements, costs, dates, participant pre-course work, etc.
SR2.7	Ability to record, management and retrieve information related to the following: • Size, distribution and turnover of the target population • Length and location(s) of each course • Additional equipment, facilities requirements and costs • Printing and other material costs • Instructional and administrative staff numbers, profiles, training needs (instructional techniques and course content), recruitment methods and costs • OJT coach's locations, profiles, numbers, training needs and costs • Organization and operational impacts • Direct costs of participants (travel, living, etc), paying authority • Total cost per participant (direct overhead and operations) • Schedule of courses • Feedback systems • Audit schedule • Any other information related to the organization.
SR2.8	The system must provide the capability of issuing automated reminders training requirements for newly appointed and promoted employees.

The following table presents the requirements of the SAT Evaluation phase.

3. SAT Evaluation Design Phase	
Item	*Description*
SR3.1	Ability to support the delivery, administration and recording of results of tests undertaken as part of the training to be given, including in the following formats: • True/false. • Multiple choice. • Matching items. • Short answer. • Essay Tests. • Simulations. • Other types of tests (oral exams, or via computer/video technology).
SR3.2	Ability to record, manage and retrieve the results of tests and relate these to standards defined in the training objectives.
SR3.3	Ability to provide accurate reporting on test results to the training sponsors including the following: • Pass/fail rate. • The identification and interpretation of trends. • No-show rates. • Costs. • Other information specified in the project directive.
SR3.4	Diagnostics to help provide detailed analyses of the training participants' results, including statistical tools to determine the efficiency and effectiveness of training given. This is likely to include: • Participant selection. • Participant reactions and perceptions. • Instructional methodology. • Instructor presentation techniques. • Lesson plans and handouts. • Session and course lengths. • Administrative systems and overhead. • Facilities and equipment. • Participant or instructor downtime. • Resource utilization.
SR3.5	Ability to support an internal quality control capability that continuously monitors the training system, including standard checklists that can be used throughout the delivery of training to ensure an audit trail for quality purposes.

The following table presents the requirements of the SAT Conduct phase.

4. SAT Conduct Phase	
Item	*Description*
SR4.1	Ability to regularly and frequently monitor the quality of training being provided by the course director and Quality Control Unit.
SR4.2	Capability to allow collection, storage, management and retrieval of the following for staff debriefing purposes: • A review of participants' test results • An analysis of participants' feedback sheets • A review of all completed evaluation checklists on instructors and facilities • Instructors' review of all training and evaluation material A review of feedback of all OJTcoaches
SR4.3	Ability to provide reporting capability (including templates) on each participant's test results, including both classroom and OJT, for the participant, his/her supervisor and the organization's audit file.

The following table presents the requirements of the SAT Validation phase.

5. SAT Validation Phase	
Item	*Description*
SR5.1	Ability to support an Observer's Guide to include the following: • The training objective. • A description of the variances in conditions and standards between the training objective and task performance specifications. • The period of time allowed for adaptation to worksite conditions and standards before validation. • Models of performance as required. • A checklist that highlights the key observable elements. • Instructions on reporting the results.
SR5.2	Ability to draft, distribute and manage questionnaires used for feedback on performance related to training, whether via mail, email, personal interviews or via the telephone.
SR5.3	Ability to collate questionnaire data according to the following criteria: • No negative variance in task performance or environmental factor understandings are identified • Shortfalls or gaps are identified • Task or environmental specification do not match the worksite reality • Over training is identified.

HCDM System Data Requirements

Data Requirements describe the data elements the HCDM system should be able to administer. Priority and secondary components of the HCDM system are identified with the expectation that secondary components would be on stream within the second or third year of operating the new system.

For all data components listed hereafter (primary and secondary), the system should provide the capability to add more fields beyond the ones listed.

Priority Components

Priority components are expected to be operational when the system is first installed and executed. These include the following:

- Employee Records
- Job Description
- Performance
- Training
- Job Rotation

Employee Records		
Item	*Description*	*Comments*
DR1. 1	**Employee Profile.** The HCDM system should provide an employee profile as follows: • Employee number (cannot be duplicated/primary field) • Name (Family name, Father's Name, First Name in separate fields which may be sorted alphabetically) • National number • Social security number • Tax number • Financial number • Military status (for males) • Medical insurance number • Date of birth • Gender • Marital status • Residential address • Contact details • Religion • Special circumstances (health problems, family members health and circumstances) • Date of commencement of work • Date of employment on daily basis • Type of employment • Category • Class	- Information in this profile is to be entered by the user. The user must be able to use a "find" function to search by name or employee number to bring up records for specific employees. All fields must be sort enabled (i.e. the ability to sort the records using any of the fields.) - The Employee Profile is the core record. Other records must be linked to the employee profile using the employee number. Exempt from this condition is the Job Descriptions Record. (see DR2 below). - The capability to add more fields in the profile is to be available to the user. - The Employee Profile requires a daily update facility.

The following table presents the requirements related to the "Employee Records" component.

Employee Records (contd.)		
Item	*Description*	*Comments*
DR1.1 (cont)	• Years in class • Classification date • Promotion date • Salary • Education (degree and specialty – i.e. Bachelors Degree, Public Administration) • Skills, competencies and accreditations • Previous experience • Previously acquired skills and accreditations • Date employment is terminated	
DR1.2	**Employee Employment Record** This record contains information regarding employee's employment as follows: • Employee number (cannot be duplicated/primary field) • Name (Family name, Father's Name, First Name in separate fields which may be sorted alphabetically) • Current Position • Position Number • Unit • Section • Directorate • Grade • Date of position • Transfer history (positions held and dates transferred into and out of position) • Employment variations (e.g. on un-paid leaves to continue studying, work outside Jordan, maternity leave, etc.) • Leave entitlement (annual and sick) • Leave variations • Competitions (Hajj, staff children scholarships, excellence, etc.). • Attendance (linked to automated "clock in" and "clock out" arrangement)	- When generating this record for an employee, the employee number is entered and information on the name is retrieved into the proper fields from the Employee Profile. Once the record is generated it should be accessed from the Employee Profile or it can be accessed by entering the employee number. - Attendance is an electronic running record of ins and outs each day; it is purely a time in, time out record against each employee. - Hajj (pilgrimage): JNC staff undertakes a competition in which their knowledge of Quran and religion, and their performance record are evaluated. The scores are gathered for the participants and the winners are granted pilgrimage. - Staff children scholarships: JNC staff undertakes a competition in which their children are selected for a university scholarship. The competition takes into consideration the required university, high school grade, and staff member performance record.

Employee Records (contd.)		
Item	*Description*	*Comments*
DR1.2 (cont)		- Excellence: JNC staff participates in a competition to achieve excellence in one of the skills required by their department/directorate. The competition takes into consideration the achievements acquired during the competition period and the staff member performance record.

The following table presents the requirements related to the "Job Description" component.

Job Descriptions		
Item	*Description*	*Comments*
DR2.1	This record contains details of the current position held by the employee as follows: • Current Position • Position Number • Unit • Section • Directorate • Summary of duties/responsibilities • Levels of authority/delegations • Positions supervised • Supervising position • Required qualifications, competencies, accreditations, and experiences • Training required for the position • Annual allocation of employees across JNC directorates.	- This record is to be linked to the Employee Employment Record above using the position number. - Annual allocation of employees across JNC directorates: This field is generated from the following information: • Position Class. • Position Category. • Position Class type (true or false) • Specified number of employees for each position in the allocation plan (this number is available in the allocation plan prepared by the Jordanian Public Budget Department annually and must be entered every year)

The following table presents the requirements related to the "Performance" component.

Performance		
Item	*Description*	*Comments*
DR3.1	**Performance Policy and Administration** The following fields are only updated annually or after a policy change: • Civil Service Bureau performance policy • Jordan Customs performance policy • Annual dates for ratings to be collected and entered • Performa's for managers to complete and sign	This record is used to establish roles and responsibilities of key players in the gathering and dissemination of sensitive performance information. Delegations, access levels and employees' involvement in the process and their access to performance feedback needs to be established in the performance policy. In addition proformas and time frames for performance management and administration will be recorded.
DR3.2	**Employee Performance Record** The following fields are retrieved from the Employee's Employment Record upon entering the employee number: • Employee number (cannot be duplicated/primary field) • Name (Family name, Father's Name, First Name in separate fields which may be sorted alphabetically) • Current Position • Position Number • Unit • Section • Directorate • Grade The following fields are completed upon the completion of each performance evaluation: • Rating period (Dates from / to) • Final Performance Rating • Goals for rating period (from previous rating period's record). • Goals completed • Goals for following rating period • Areas of development (entered individually in separate fields)	- This record is used to track the employee's performance throughout their employment. - This record is linked to Employee Training Record through the training courses recommended for the position number. Only the areas of development need to be linked to the training course and the employee training record. The other confidential information in this record is accessible only by those nominated by the head of the HR Directorate. - Reporting against the areas of development (e.g. location/grade) provides the Training Center with priorities for annual training plan. This is a key input to the SAT analysis phase.

The following table presents the requirements related to the "Training" component.

Training		
Item	*Description*	*Comments*
DR4.1	**Training Policy and Administration** The following fields are only updated annually as part of the Training Center's planning activities and whenever policy changes are made: • Training policy • Training proformas – course outlines, participant feedback, administrators checklists • Annual training program including location • Training actually delivered (link to training course records) • Costs of delivering training • Certification	- The training policy will contain roles and responsibilities of those involved in training analysis, design, delivery and evaluation. This includes interdependent relationships with HR Directorate and Planning and Organization Directorate, structure and re-sourcing of the Training Center and delivery expectations as linked to Jordan Customs Corporate Plan and emerging priorities. - The training policy will also address delegations given to the Training Center Director in relation to course nominations, acceptances and post course evaluation.
DR4.2	**Training Course Records** This record will contain all the training courses available to employees and is to be updated as courses are offered or needed. Information contained in these records: • Course code (Related to the Customs training center) • Course Title (Related to the Customs training center) • Type of course (workshop, OJT, seminar) • Course summary • Competencies/skills targeted in the course • Positions requiring training course i.e. target audience • Pre-requisites for course participants • Presenters manual • Course handbook • Internal subject matter experts (SMEs) • External SMEs and contact details • OJT trainer – location • Date of last update to the course • Accreditation details • Timeframe for refresher training	- This record is to be linked to the Job Descriptions through the training required for the position. This record will be updated annually following the release of the training calendar.

Training (contd.)			
Item	*Description*		*Comments*

DR4.3	**Employee Training Records**
	
	The following fields are retrieved from the Employee's Employment Record upon entering the employee number:
	• Employee number (cannot be duplicated/primary field)
	• Name (Family name, Father's Name, First Name in separate fields which may be sorted alphabetically)
	• Current Position
	• Position Number
	
	The following fields are entered into the record and should be grouped by year:
	• Year (must be able to use for current and future year at least up to 5 years)
	• Training courses recommended/required (each to be entered into a separate field)
	• Other Courses
	• Training course completed – main field with following "sub-fields"
	   o Course code
	   o Course Name
	   o Date course completed
	   o Duration of course
	   o Location course taken(name of training center)
	   o Course evaluation
	   o Post course evaluation
	   o Skills and competencies acquired
			- This record is to track the employee's training record and create a training history.
			
			- This record is linked to the Job Descriptions through the position number. Skills and competencies acquired need to be linked to the Training Course Record.

The following table presents the requirements related to the "Job Rotation" component.

Job Rotation		
Item	*Description*	*Comments*
DR5.1	The following fields are retrieved from the Employee's Employment Record upon entering the employee number: • Employee number (cannot be duplicated/primary field) • Name (Family name, Father's Name, First Name in separate fields which may be sorted alphabetically) • Residential address • Employee skills/competencies • Performance history including grading • Training history • Special circumstances	- A record should be generated from the Job Descriptions Record of possible rotation options where approximately 75% of education/skills/competencies match with the employee being considered for rotation. - Courses required to complete the skill gap should be included in the report and taken from the Training Records. - The courses identified in the step above should then be compared with the Training Records and a resulting list of courses to be taken including the course title, training center, and start / end dates. This becomes the employee's annual training plan.

Secondary Components

Secondary components include the following:

- Career Planning
- Succession Planning
- Reporting and Workforce Planning (see section "Reporting and Workforce Planning" for more information)

The following table presents the requirements related to the "Career Planning" component.

Career Planning		
Item	*Description*	*Comments*
DR6.1	The following fields are retrieved from the Employee's Employment Record upon entering the employee number: • Employee number (cannot be duplicated/primary field) • Name (Family name, Father's Name, First Name in separate fields which may be sorted alphabetically) • Employee skills/competencies	- A record should be generated using the Job Descriptions record where the user enters the position name or number targeted for the employee and a comparison of the employee's competencies (from above fields) and those qualifications of the position (from Job Descriptions records) is generated in the form of a record indicating which training courses or programs to be completed by the employee prior to him/her being placed in the position. - The courses identified in the step above should then be compared with the Training Records and a resulting list of courses to be taken including the course title, training center, and start / end dates. This becomes the employee's annual training plan.

The following table presents the requirements related to the "Succession Planning" component.

Succession Planning		
Item	*Description*	*Comments*
DR7.1	The following fields are retrieved from the Employee's Employment Record upon entering the employee number: • Employee number (cannot be duplicated/primary field) • Name (Family name, Father's Name, First Name in separate fields which may be sorted alphabetically) • Current Position • Position Number • Employee skills/competencies The following fields are accessed through the employee performance record: • Rating period (Dates from / to) • Final Performance Rating • Goals for rating period (from previous rating period's record) • Goals completed • Goals for following rating period • Areas of development (entered individually in separate fields)	- A record should be generated from the Job Descriptions Record and Employee Training Records of possible candidates to be nominated in the succession planning who meet most of the required skills and competencies for the considered post.

Reporting and Workforce Planning

JNC requires efficient and comprehensive reporting capabilities for succession planning; Customs is looking to engage in dynamic organizational level planning and analysis and requires an advanced report generating module. "Reporting and Workforce Planning" is considered one of the secondary components identified in section "

Secondary Components".

In addition to providing a collection of new required reports, the HCDM system is also required to provide a total of around 80 existing reports currently in use by JNC staff.

The ability to customize reports (coupled with OLAP and Data Mining capabilities if needed) is essential to aid decision makers to make informed decisions related to workforce planning. The HR Directorate, the Training Center, and Planning and Organization Directorate will determine the reporting options to be accessed.

Reporting and Workforce Planning		
Item	*Description*	*Comments*

WP 1	To assist workforce planning activities and general HR management activities the following specific reporting capabilities are required:
	• Provides real-time data extraction:
	    o Including for defined dates (past and future) – e.g. to support "what if" scenarios for workforce planning activities.
	    o Reports are displayed on screen, and can be printed when required.
	    o Reports with different views, e.g. by geographical and organizational location; diversity groupings; skill sets, quarter/year. This is essential for effective workforce planning decisions.
	• Analysis includes workforce demographics, training requirements and activity (individual and group/location), costing for all training, organization structural and staffing possibilities responsive to significant operational initiatives.
	• Quickly and easily extracts staffing data for workforce reporting requirements.
	• Reports to include useful graphics and capacity to include qualitative as well as quantitative data.
	• Report parameters configurable by user and stored so report can be subsequently re-run.
		- Both regular and 'ad-hoc' reporting options are required to be available as soon as the system is operating. However, some of the more sophisticated workforce planning reporting such as the analysis of workforce demographics may not be expected to come on stream until year two of the operation of the new HR system.

Reporting and Workforce Planning (contd.)		
Item	*Description*	*Comments*
WP1	• Interface with Microsoft Office suite. Reports data can be exported to an excel sheet for further manipulation (dicing, clustering, aggregating…) • System Administrators should be provided the capability of specifying user-level security on available reports. The System Administrator should be able to specify which reports are accessible by which users, based on their granted access level.	

Non Functional Requirements

The "Non Functional" requirements specify global constraints that must be satisfied by the software. These constraints, also known as software global attributes, typically include usability, accessibility, reliability, and security.

Non Functional Requirements			
Category	**Item**	**Aspect**	**Description**
Usability	**NFR1**	Ease of use.	Be "user friendly" in terms of: • Ease of navigation: The user can navigate easily between the different screens of the system or accomplish a certain business task with minimum number of clicks. • Ease of data entry: The user can complete a business tasks with minimum number of data entries; the system will automatically display any available lookup data associated with the entered information. • Ease of Learning: New users should be able to quickly learn how to effectively use the system.
	NFR2	Look and Feel (user interface language).	The system must be fully Arabized. The field labels must be in Arabic and data must be entered in Arabic[2]. The system must be able to sort data in Arabic and generate all reports in Arabic. Dual language options are acceptable.
Security	**NFR3**	User-level Security.	The system must have the capability of assigning various levels of access for each user authorizing him/her access to the information he/she requires as determined by the system administrator.
	NFR4	Time Out for Idle Sessions	The system should provide a configuration parameter to set the session time out value for idle sessions. This value is typically set by the System Administrators.
	NFR5	Logging and Auditing of Historical Information	The system should provide the System Administrators and privileged users with the capability of viewing and auditing historical information describing different activities performed by the users of the system (who did what).

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[2] JNC database servers are configured to use the "arabic_united arab emirates.ar8mswin1256" NLS_Lang value.

Non Functional Requirements (contd.)			
Category	*Item*	*Aspect*	*Description*
Accessibility	**NFR6**	Remote access.	The system will be accessed by users located at various Customs Houses in the Kingdom and thus the system must be able to accommodate remote users.
Expandability	**NFR7**	New modules are as needed.	The system should be expandable and have the ability to include other HR modules should they be required in the future. Such modules include: • Time and Attendance • Occupational Health & Safety • Compensation • Benefits
Supportability	**NFR8**	Through Life Support Services.	Vendors are required to provide a responsive, approachable maintenance service during and after installation.
	NFR9	Help Documentation.	The system must provide appropriate context-linked online help facilities and a fully skilled helpdesk facility for 'power users'. In addition, the following manual should be provided: • Starter User Manual • Administration and Operational Manual • Troubleshooting Manual
	NFR10	System Demonstration.	Vendors will be required to give a live demonstration in Jordan of the system they are proposing. Video Conferencing is acceptable as a second option while physical presence is preferable.
	NFR11	End User Training.	Vendors are required to provide appropriate training. Employees and 'power users' need to be fully supported via classroom, on-line (CBT), and "Train-the-Trainer" training. options Vendors should provide a user-friendly training mechanism for new starters and managers on access, capacities, etc., quickly and comprehensively.

Non Functional Requirements (contd.)			
Category	*Item*	*Aspect*	*Description*
Reliability	**NFR12**	Robustness	The system must be robust through: • Lengthened mean time to failure by including "fault-tolerance" measures in the system. • Shortened mean time to repair.
Performance	**NFR13**	Response Time – Screen Load Time	The system must promptly respond to user requests. An average load time of any screen in the system is expected to be between 20 and 30 seconds.

Technical Requirements

This section presents a number of technical requirements that should be met by the proposed HCDM System software.

| Non Functional Requirements (contd.)	
Item	*Description*
TR1	The proposed HCDM System should run on any of the Microsoft Windows 200X Server Family.
TR2	The proposed HCDM System should be Web-enabled; can be accessed through the standard Microsoft Internet Explorer application.
TR3	The proposed HCDM System should be implemented using Microsoft Technologies.
TR4	The HCDM System should be able to communicate with existing JNC Oracle RDBMSs.
TR5	The HCDM System should allow its users to temporarily work locally (disconnected) in case of a communications failure during normal operation.

Annex A: Systems Approach to Training (SAT)

SAT, also known as Instructional System Design (ISD) or ADDIE (Analysis, Design, Development, Implement, Evaluate) provides a means for sound decision making to determine the who, what, when, where, why, and how of training. The concept of a system approach to training is based on obtaining an overall view of the training process. It is characterized by an orderly process for gathering and analyzing collective and individual performance requirements, and by the ability to respond to identified training needs. The application of a systems approach to training insures that training programs and the required support materials are continually developed in an effective and efficient manner to match the variety of needs in an ever rapidly changing environment.

The SAT model was first established by the US Department of Defense, but can now be found in almost any type of organization. It grew out of the "systems analysis" concepts that became popular after World War II. It is probably the most extensively used instructional design model in use today.

SAT is concerned with the identification of training requirements based on the analysis of job performance requirements and data obtained from experts in the job to be performed. Training objectives are formulated as a result of the job analysis process and tests are developed to be used to assess the learner's progress toward meeting the training objectives. SAT also attempts to bring structure to the instructional design process when determining the optimal instructional strategies, instructional sequencing, and instructional delivery media for the types of training objectives involved.

Although there are minor differences, most training development systems follow an approach similar to this:

1. Analyze the system in order to completely understand it, and then describe the goals you wish to achieve in order to correct any shortcomings or faults within the system.
2. Design a method or model to achieve your goals.
3. Develop the model into a product (in training, this product is called courseware).
4. Implement the courseware.
5. Evaluate the courseware and audit-trail throughout the four phases and in the field to ensure it is heading in the right direction and achieving the desired results.

INFORMATION
LINE

ACTIVITY
PATH
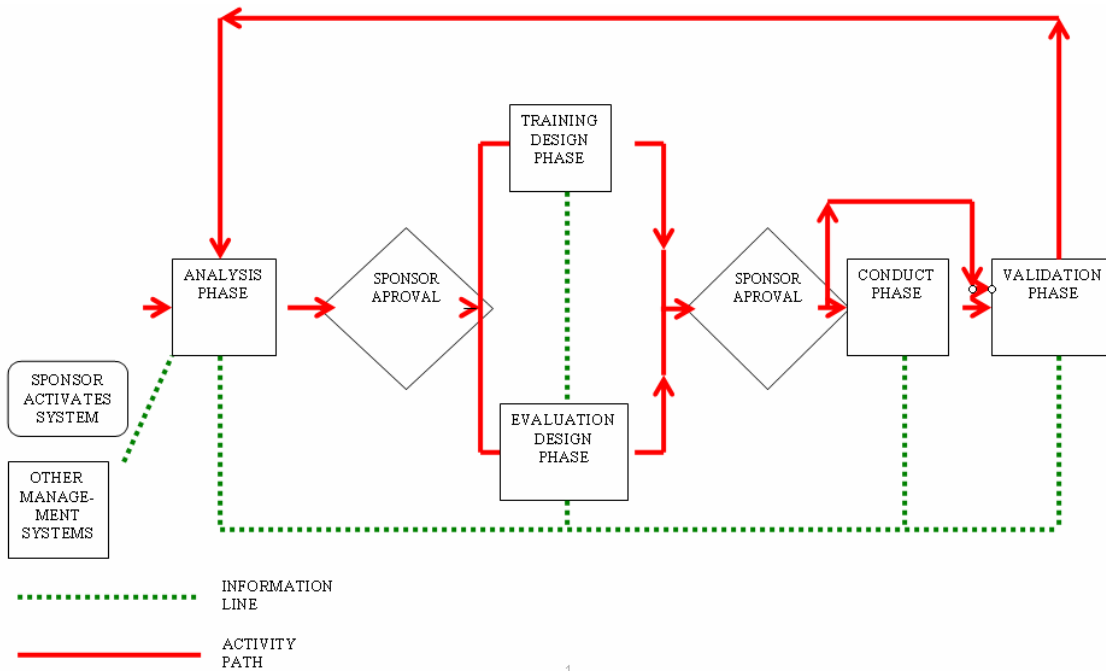
The above diagram highlights the importance of evaluation and feedback throughout the entire training program. It also stresses the importance of gathering and distributing information in each of the five phases and shows the training process is not a static (waterfall) model, but an iterative flow of activities (dynamic or spiral).

The five phases are ongoing activities that continue throughout the life of a training program. After building a training program, the other phases do not end once the training program is implemented. The five phases are continually repeated on a regular basis to see if further improvements can be made.

A brief description of the SAT process is listed below.

1. **Analyze**

- Analyze system (department, job, etc.) to gain a complete understanding of it.
- Compile a task inventory of all tasks associated with each job (if needed).
- Select tasks that need to be trained (needs analysis).
- Build performance measures for the tasks to be trained.
- Choose instructional setting for the tasks to be trained, e.g. classroom, OJT, self study, etc.
- Estimate what is going to cost to train the tasks.

2. **Design**

- Develop the learning objectives for each task, to include both terminal and enabling objectives.
- Identify and list the learning steps required to perform the task.
- Develop the performance tests to show mastery of the tasks to be trained, e.g. written, hands on, etc.
- List the entry behaviors that the learner must demonstrate prior to training.
- Sequence and structure the learning objectives, e.g. easy tasks first.

3. **Develop**

- List activities that will help the students learn the task.
- Select the delivery method such as tapes, handouts, etc.
- Review existing material so that you do not reinvent the wheel.
- Develop the instructional courseware.
- Synthesize the courseware into a viable training program.
- Validate the instruction to ensure it accomplishes all goals and objectives.

4. Implement

- Create a management plan for conducting the training.
- Conduct the training.

5. Evaluate

- Review and evaluate each phase (analyze, design, develop, implement) to ensure it is accomplishing what it is supposed to.
- Perform external evaluations, e.g. observe that the tasks that were trained can actually be performed by the learner on the job.
- Revise training system to make it better.

The steps in each phase should not be thought of as concrete in nature. That is, one step does not have to be completed before the next one is started. For example, some training designers will have to complete part of the work in the design phase before they can complete the estimate step in the analysis phase. In the development phase, the first three steps, list learner activity, select delivery system, and review existing material, might be combined into one step by many developers. Every training project will develop its own rhythm. The developers must find the natural flow of the steps required to produce a successful training program.

Although the SAT process is a formal one, in that the five phases should be performed as shown in the flowchart, it requires both art and science in its implementation.

Also, in many instances, steps may be bypassed. For example, if a manager comes to the planner with a training problem, the task identification steps will be skipped since the planner may already know which task needs trained. If the planner has developed a similar course before, then many steps, such as reviewing existing material and selecting the instructional setting, will only be briefly visited as the planner may have gone through similar processes before and probably has a good ideal of where the organization is going.

Annex B: Background Information

This annex provides information related to the existing systems currently used at JNC to perform Human Resources and Training related activities. It provides information such as the objective of the system, its technical specifications, and its operational parameters (data size and number of users). The annex also provides information related to the current network infrastructure of JNC WAN and JNC Headquarters LAN.

The annex also provides information related to the Human Resources system currently under development by the Civil Service Bureau.

Existing Systems at JNC

System Name	Objective	Technical Specifications	Operational Parameters
Human Resources System	The Human Resources system is used to keep track of JNC employees' records including: o Managing Employee's Information o Leaves/Vacations o Promotions o Deductions o Scholarships o Pilgrimage Applications o Staff Children Scholarships. o Reallocations. o Performance Evaluation (as per the rules of Jordan Labor)	o The system is developed using Microsoft FoxPro 2.6 running under DOS, and is localized to Arabic using an application named "Nafitha4". o The system is hosted on a server at JNC Headquarters, and is not accessible to JNC employees located outside its Headquarters offices.	o The system is composed of a total of 25 screens, and provides its users with a total of 90 statistical and executive reports. o The data volume manipulated by this system is around 23 MB, and an annual growth rate of 20000 records is expected. o The system serves a total of 10 users.
Training System	The Training System is used to keep track of training activities that take place at JNC. It is used by the "Customs Training Center" employees to manipulate data related to the training courses taken by the JNC employees. It also provides its users with a number of reports describing course information (course title, course objective, time, location, duration, number of attendees), instructors, and employee training history records.	o The system is developed using Microsoft FoxPro 2.6 running under DOS, and is localized to Arabic using an application named "Nafitha4". o The system is hosted on a server at the "Customs Training Center", and is not accessible to JNC employees located outside the center.	o The system is composed of a total of 13 screens, and provides its users with a total of 20 statistical and executive reports. o The data volume manipulated currently by this system is around 34000 records. o The system serves a total of 11 users.

System Name	Objective	Technical Specifications	Operational Parameters
Financial System	The Financial system is used to manage the financial issues within JNC. It consists of the following modules: o Internal Expenses: Overtime Payments, Gratuities, Employee Savings o General Payments: Salaries, Social Security Payment. o Bonds o Deposits o Loans	o The system is developed using Microsoft FoxPro 2.6 running under DOS, and is localized to Arabic using an application named "Nafitha4". o The system is hosted on a server at JNC Headquarters.	o The system is composed of a total of 365 screens, and provides its users with a total of 239 statistical and executive reports. o The data volume manipulated currently by this system is around 600 MB. o The system serves a total of 11 users.
Attendance System	The Attendance System is used to keep track of JNC employees' attendance transactions, including sign in/out, delays, personal leaves, and overtime.	o The system is developed using Microsoft FoxPro 2.6 running under DOS.	o The data volume manipulated currently by this system is around 7 MB, and an annual growth rate of 100000 records is expected. o The system serves a total of 500 users.
JNC Encyclopedia	The Encyclopedia is a web-based application that provides JNC employees access to a wide range of information in a read-only fashion. This information includes: employee information, training information, financial information, and JNC News. The Encyclopedia is reads the information it displays from an Oracle database that is populated with data originating from the Human Resources and Financial systems described above.	o The system is implemented as a Web site using Microsoft Visual Basic 6.0 and ASP. o The system is using an Oracle RDBMS (Oracle DB v9.1.2)	o The data manipulated by this system is collected by the Human Resources and Training systems discussed above. The data volume and expected annual data growth rate is related to that of these two systems. o The Encyclopedia serves a total of 2500 users.

Integration between Existing Systems at JNC

All existing systems identified above (HR, Training, Attendance, and Financial) are working sepratly from each other. There is no electronic interaction between these systesm. The only type of interaction that takes place between these systems is performed in a manual fashion, where data is transferred between these systems through the use of diskettes, CD, or printed papers in some cases.

The following table presents the existing interaction scenarios between these systems

Source System (providing data)	Destination System (consuming data)	Information Exchanged
HR System	Trainig System	Employee Information
HR System	JNC Encyclopedia	Employee Information Employee Trainig Record Employee Relocation History Employee Punishments/Accrediaions Employee Vacations
HR System	Financial System	Employee Allocations Employee Vacations Employee Overtime Employee Promotions Employee Deductions Employee Trainings (as Trainee and as Trainer) Employment Termination
Trainig System	HR System	Employee Trainings (as Trainee and as Trainer)
Finacial System	JNC Encyclopedia	Employee Salary Information

JNC Human Resources System Reports

The following table provides a list of reports provided by the existing Human Resources system. The HCDM system is required to provide these reports.

Report Category	Report Name
Code Reports	JNC Positions
	JNC Units
	Employees Specializations
	Employees Skills
Main Reports	Personnel report sorted by category type of the employee
	Personnel report sorted by class
	Personnel report sorted by educational background
	Personnel report sorted upon (Date of commencement of work, Date of birth, classification date, and date of last transfer)
	Personnel report sorted by basic salary
	Personnel report sorted by position
	Personnel report sorted by specialty
	Personnel report sorted by (Unit and Section)
	Personnel report sorted by Classes/ formation
	Personnel report sorted by employee situation
	From employee number to employee number report
	Personnel report sorted by names or by directorates
Technical Reports	Training courses report
	Employee Vacation Card report
	Employee Job rotation report
	Unit Personnel report
	Personnel leaves balance report per unit/directorate
	Personnel services report
	Transferred Personnel Report to a specific unit/directorate within a specific time frame
	Job auditing within units/directorates report
	A report for employees who their services in a specific unit to that date exceeds in years within an age category
Statistical Reports	Statistics of (sequence outstanding) employees report
	General statistics of (analysis table)
	A report of general statistics

Report Category	Report Name
Statistical Reports (contd.)	Personnel statistics depends on (educational background)
	Personnel statistics depends on (category)
	General statistics depends on many conditions (categorized, educational background, class, age classifications, specialty, occupation, work centers, duration in service)
	General statistics depends on vacations report
	Units' statistics (depends on position type)
	Units' statistics (depends on skills)
	Units' statistics (depends on class and category)
	Job statistics (depends on gender/ categories)
	Skills statistics (depends on gender/ categories)
	Number of employees (depends on educational background)
	Location distributions of employees
	Personnel distributions (depends on category)
	Number of employees (depends on category & educational background)
	Number of employees (depends on category & age)
	Number of employees (depends on category & work unit)
	Number of employees (depends on category & period in position)
	Number of employees (depends on specialty & educational background)
	General statistics for a customs center/ directorate
	Statistics of leaves balance and vacations per unit
Promotion Reports	A report table of required promotion
	A report table of promotional
	A report of Employees distribution depending on categories
	A report of distribution for one year
	A report of promotional table
Cards	Employee file card
	Summarized Employee file card
Control Reports	Employees who their occupation units were not entered
	Employees who their departments were not entered
	Employees who their financial numbers were not entered
	Employees who their positions numbers were not entered
	Employees who their addresses details were not entered

Report Category	Report Name
Allowances and Deductions Reports	A report of Allowances/Deductions for a specific employee
	Annual Allowances/Deductions report
	Annual Deductions report
	Annual Allowances report
	All Allowances/Deductions report
	A Deductions report for three years
System Outgoing Letters	Leaves vacation form
	Medical insurance form
	Court letter
	Reiterate invitation letter
	Special invitation letters
Attendance Monitoring Reports	A detailed report for employee's attendance per Directorate
	A general report for employee's attendance per Directorate
	A report of the belated employees (morning and evening)
	A monthly report for belated employees
	A detailed attendance report for an employee
Annual Reports	Very good and above annual report
	Annual report for all reports
	Annual report for 10% outperforming employees
	A report of who dose not have a due date in last grade
	A report of who dose not have an annual report and a due date in last grade
	Annual report for a specific score
	A report for additional increase for the current year
	A report for all reports depends on category and city
	A comprehensive report for the current year
	A report for the general observations
Inquiries List within HR System	Query by name
	Query depends on many conditions
	Query about the employees who due to an job adjustment
	Query about period in service for employees in a unit
	Query about employees who become 60 years old

JNC Network Infrastructure

The following two diagrams present the network infrastructure of the JNC WAN and the JNC Headquarters LAN respectively. Two separate MS Visio files[3] are also included with this document.
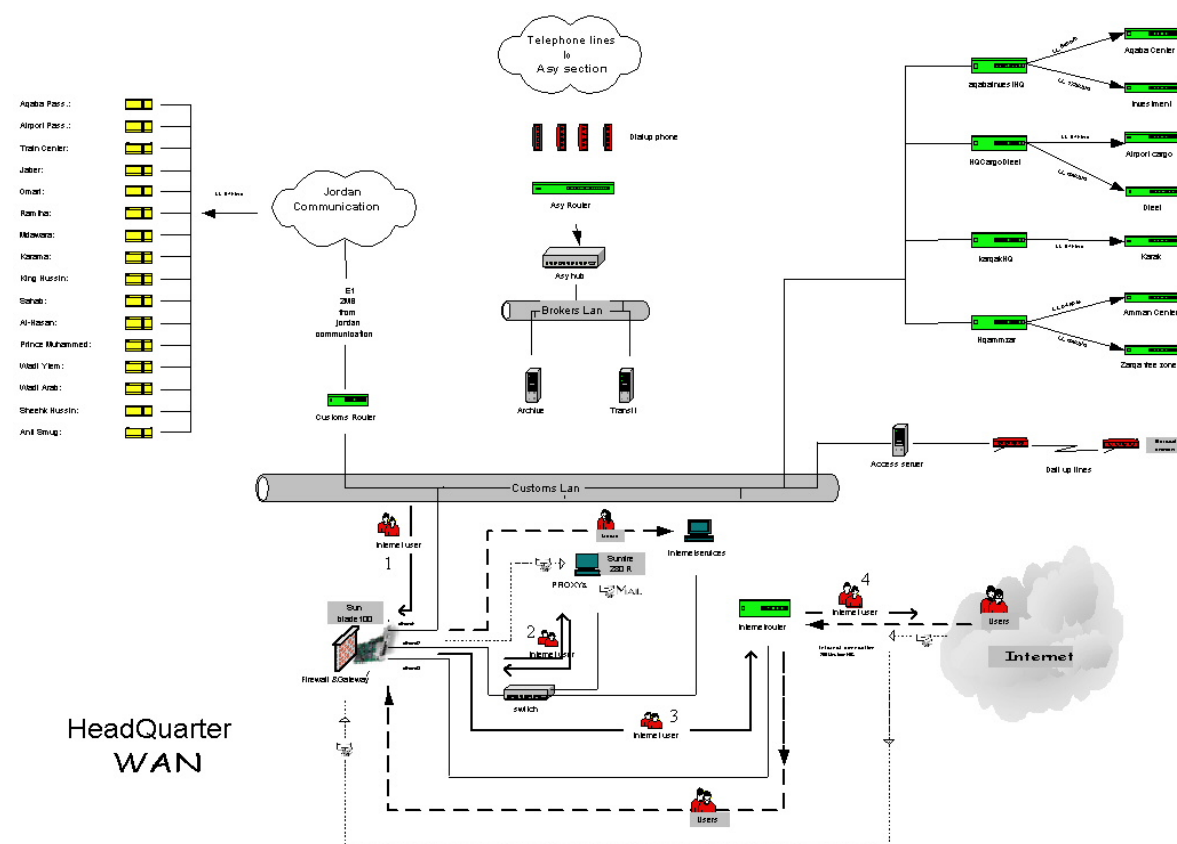

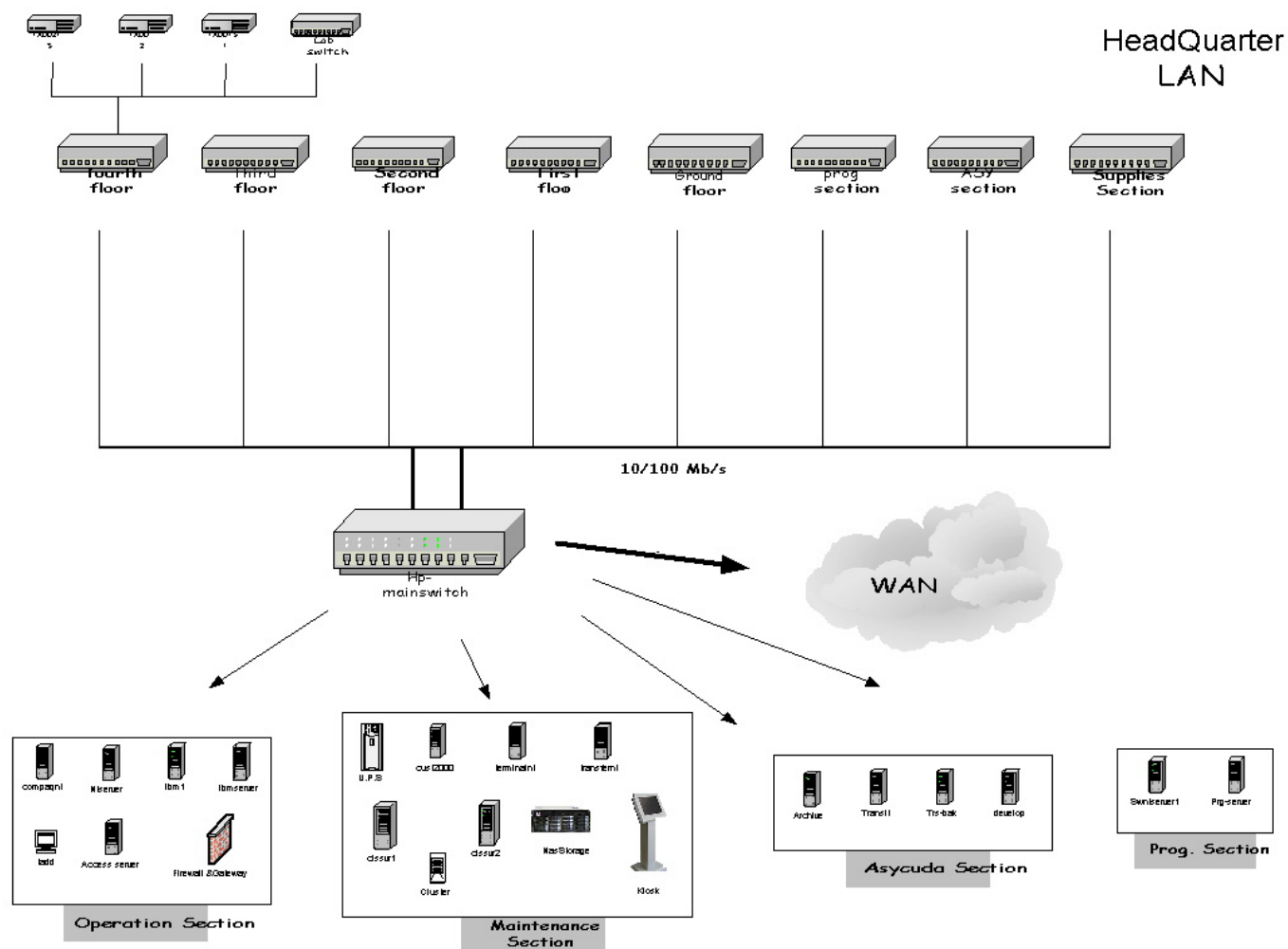**Figure 1 Jordan National Customs WAN**

Figure 2 Jordan National Customs Headquarters LAN

Human Resources System at the Civil Service Bureau

System Name	Objective	Technical Specifications	Operational Parameters
Human Resources System	The Human Resources system is developed as per the Jordanian Labor requirements (the Civil Service Law). The system is envisioned to be used by all government departments during the coming 1-2 years. Each department will operate their own isolated, customized version of the system. Data is not expected to be shared between the different departments. The system provides the following two main functionalities: o Look Up Data Management: A total of 20 screens that are used to manage all lookup data used by the system. Each department is responsible for maintaining their own look up data, which is different from that used by other departments. o Human Resources Management: A collection of screens that used to perform the Human Resources management activities as per the Civil Service Law. Available functionalities include: • Annual Employee Allocation: Allocation of available employees to available openings as per the annual budget issued by the Ministry of Finance. • Employee Information: Name, Address, Education, Skills, Experience… • Employment Letters: Managing official employment letters • Contractual Employees: Managing contractual employees information and contracts	o The system is developed using Oracle 8i RDBMS and Developer 6i o The system is a desktop-based application, developed using the client/server architecture.	o The system is composed of a total of 250 screens. o The number of users it is expected to serve varies from one department to anther.

System Name	Objective	Technical Specifications	Operational Parameters
Human Resources System (contd.)	- Permanent Employees: Managing permanent employees' information (salaries, vacations, accreditations, punishments…) 4th Level Employees[4]: Managing 4th Level employees' information (salaries, vacations, accreditations, punishments…) - Employee Annual Evaluation: Managing the annual employee evaluation as per the Civil Service Law. - Leaves and Vacations: Manage vacations and leaves of employees as per the Civil Service Law. - Reports: A collection of around 150 predefined reports.		

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[4] 4th Level Employees are holders of a High School Diploma or less.